

# W5YI REPORT

Up to the minute news from the worlds of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

## Dits & Bits

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### ★ In This Issue ★

Electronic Privacy Act News  
VEC's & Question Pool Update  
FCC Issues New RFI Handbook  
RF Radiation Standards Proposed  
Receiver Deregulation NPRM  
Report of Home Dish Business  
FCC Refuses to Set DBS Specs  
Foreign CB Linear Sale Banned  
Amateur Radio Call Signs Issued  
Hams to Choose Own Call Signs?  
FCC Rules on TV Must-Carry  
Orbiting Telescope to be Built  
...and much, much more!

## Electronic Privacy Act Heads Toward Final Phase

The in-fighting between the cellular telephone industry and those that oppose the Electronic Communications Privacy Act on the basis that it provides mobile phone users a false illusion of confidentiality is heating up.

In all probability the Judiciary Committee considering the Senate version of the ECPA will approve the bill this Thursday and send it on to the Senate Subcommittee on Communications - most likely on Friday. It then goes to the top of the legislative calendar for a Senate floor vote if S.2575 is passed by the Judiciary unanimously - otherwise to the bottom where it might not get voted on at all.

Once passed by the Senate, it must be reconciled with the House version or the House could accept the Senate version - a quicker measure. There are many minor differences. The bill could reach Reagan's desk within 60 days. The odds are he'll sign it into law.

The new draft approved a couple of weeks ago has two changes concerning radio. Reduced are the criminal sanctions for Public Land Mobile Common Carriers (i.e. old car phone technology) and paging services from 1 year/\$100,000 to a 6 mos/\$500 fine. This brings it in line with the penalties for cellular infractions.

Backyard dish owners also will be able to receive unscrambled satellite programming unless the video programmer obtains a court injunction to stop the interception. Continued unauthorized satellite signal acquisition can incur a fine of up to \$500. Efforts are underway to add FM subcarriers and remote broadcast pickup stations to this. They are now fully protected. That is, you can't monitor them.

As we head into the end of the Privacy Act's legislative process, more press coverage is expected. A well-known nationally syndicated columnist supposedly will editorialize on the privacy aspects of cellular phone service next week. It could have an effect on the legislation. The New York Times is also considering a piece that is even stronger (written by a cellular engineer who is really risking his job) criticizing the bill.

The bill if signed into law will limit the capabilities of radios. They will be brought under the same legal category that covers "bugs" and wiretap devices. What that means is that certain types of radios (such as scanners) will be illegal to manufacture, market, advertise, own or use. Included will be radio receivers that "primarily" tune into protected spectrum such as cellular phone frequencies. Right now you can use any type of radio receiver you want to. An exception might be radar detectors in certain states.

# W5YI REPORT.....

Page #2

September 15, 1986

Senator Leahy, author of the Senate version, is committed to FCC required interception labelling on cellular phones and scanner radios. This labelling would be similar to cordless phone labels which specify that the conversation may not be private. Cellular interests vigorously oppose any labelling since it takes away the very reason cellular companies support the Privacy Act - that is to give the illusion of phone privacy.

Scanner labelling will advise users that their receivers are capable of tuning into lawfully protected communications. Some companies (such as Radio Shack) are working both sides of the street by supporting cellular privacy and marketing scanners that will receive their transmissions. A scanner not "primarily" designed to receive protected spectrum (that is, a scanner where more than 50% of the receiving capability lies outside the banned listening areas) can legally be marketed, but the public's "moral righteousness" will prevent them from listening to it. (I don't know who came up with all of this, but I have a bridge I want to sell them!)

On Friday, September 5th, the Washington Legal Foundation, an 80,000 member conservative public interest law firm, filed a petition with the FCC calling for cellular labelling. They filed on the basis that many of their members use cellular telephones.

There are basically three major problems with the legislation...

(1.) The bill makes a criminal out of listening to certain readily accessible portions of the radio spectrum within the confines of your own home.

(2.) The bill is based on the false premise that certain portions of the radio spectrum are inaccessible.

(3.) The bill shifts responsibility for signal protection from the transmitter to the receiver. Economical encryption schemes (as low as installing a \$5 chip) are available.

September will be a hot month for Privacy Act happenings! We will keep you posted!

## UPDATE ON VEC'S MAINTAINING QUESTIONS

The FCC proposed on June 12, 1985, to allow VEC's (Volunteer-Examiner Coordinators) to assume maintenance of Amateur operator examination question pools, a function currently performed by the FCC. At this point the FCC now determines the various questions for each of the four written Amateur operator examination elements, PR Bulletins 1035 A, B, C and D.)

The FCC has advised all VEC's that the new rules adopted August 4, 1986, allowing VEC's to compile and revise the questions for a particular examination element will give VEC's "even greater flexibility to work with other VEC's and with educators, publishers and radio experts."

"All you (VEC's) have to do is to give them (VE's) instructions on how to select the questions. They can even obtain question sets and telegraphy messages from another supplier, so long as the supplier uses your VEC question pool and follows your instructions on how to select questions."

During early September, newly revised instructions were sent to all VEC's detailing the new procedures adopted in PR Docket 85-196 and at the 1986 Conference of VEC's held at the FCC/Washington DC last month.

Ordinarily they would have become effective as soon as the Office of Management and Budget reviews and clears the new procedure. The Paperwork Reduction Act of 1980 requires that OMB approve all new "information collection activities."

At least three Petitions for Reconsideration have been filed, however, and it appears that it will be some time (probably "months") before VEC's maintain the question pools and VE's design tests. No new rules can go into effect until these petitions are disposed of.

Meeting in St. Louis two weeks ago, the ARRL's Executive Committee, voted to file a Petition for Reconsideration requesting that the FCC delay the Order transferring the question pool maintenance responsibility to the VEC.

Bring 2 CQ's — to answer  
PVRC news letter.

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"I am a currently licensed Extra Class amateur radio operator and wish to be a volunteer examiner. I have never had my station or operator license revoked or suspended. I do not own a significant interest in nor am an employee of any company or entity engaged in making, preparing or distributing amateur radio equipment or license preparation materials. My age is at least 18 years old.

WOULD YOU LIKE TO BECOME A VOLUNTEER EXAMINER? If so, please send a copy of your Extra Class license, this signed statement, and a SASE to: W5YI-VEC; P.O. Box #10101; Dallas, Texas 75207. A certificate (optional) is also available for \$1.00. Details and accreditation materials will be sent to you within a two week period.

### AMATEUR RADIO CALL SIGNS....

assigned through the first of August.

Radio District	Gp."A"	Gp."B"	Gp."C"	Gp."D"	Extra Adv.	Tech/Gen	Novice
0	NU0M	KE0HS	N0HKE	KA0YQH			
1	NG1K	KB1ZV	N1EIP	KA1OVY			
2	NT2I	KD2VC	N2GPP	KB2BNJ			
3	NC3S	KC3ZB	N3FCR	KA3QAB			
4	AA4VS	KJ4ZC	N4OQL	KB4UQB			
5	WQ5G	KF5QL	N5JQV	KB5ARZ			
6	WX6E	KI6JY	N6OER	KB6OAK			
7	NW7L	KE7TP	N7INQ	KA7ZQZ			
8	NT8J	KE8HB	N8HTI	KB8AHI			
9	NN9L	KD9ZE	N9GAR	KA9WAV			
N. Mariana I.	AH0E	AH0AC	KH0AI	WH0AAF			
Guam	AH2W	AH2BI	KH2CD	WH2AKB			
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC			
Midway Is.			AH4AA	KH4AD	WH4AAF		
Palmyra/Jarvis	AH5A						
Hawaii	(*)	AH6HG	NH6HC	WH6BLC			
Kure Is.				KH7AA			
Amer. Samoa	AH8C	AH8AC	KH8AD	WH8AAW			
Wake Wilkes Peale		AH9AC	KH9AC	WH9AAE			
Alaska	(*)	AL7IH	NL7JE	WL7BLA			
Virgin Is.	KP2O	KP2BA	NP2BV	WP2AFD			
Puerto Rico	WP4V	KP4KV	NP4YT	WP4GAR			

(Note: All Group "A" call signs have been assigned in Hawaii and Alaska. Group "B" now being assigned to Extra Class amateurs.)

### HAMS TO CHOOSE THEIR OWN CALL SIGN?

It could happen - in fact it is likely! The concept, which has preliminary FCC approval, calls for the ARRL to issue secondary call signs for use by amateur radio operators who already hold FCC assigned call signs.

The League made the request to the Secretary, FCC, in a letter dated June 17, 1986. ARRL asked for the exclusive role of issuing special amateur radio call signs. The Commission believes that it can legally be done under the existing rules.

Johnny Johnston, W3BE, Chief of the Personal Radio Branch told us Friday he "does not believe there is any legal impediment as long as the FCC assigns the primary amateur radio station call sign. The Bureau Chief (Bob Foosaner) is interested and moving on the

concept. It will be discussed at San Diego (ARRL National Convention) this week end."

The League will have certain guidelines for issuing supplemental call signs. The major stumbling block is a needed provision for "cost recovery." In other words, it won't be free. You'll have to buy the call sign. A translation list made available to the FCC will let them know an amateur's FCC issued call sign. It appears probable that secondary, memorial and special event call signs are on their way back! It could happen this year.

- John Small, FCC/Washington DC advises that third party traffic has been authorized between Korean amateur stations 6K86AG and HL86A and the United States for the period September 6 though October 8, 1986, to commemorate the 1986 Asian Games being held in Seoul.

- Due to PRB-1, an antenna ordinance in the city of Lighthouse Point (Florida) has been made less restrictive. Citing that new federal guidelines prohibit restrictions, such as size, that would limit an antenna's performance, residents can now install satellite dishes up to 10 feet in diameter but must provide permanent enclosures to reduce their unsightly appearance.

- Apparently the Metroplex VEC (Leonia, NJ) is having some problems! We have been asked to coordinate many amateur radio sessions that Metroplex previously coordinated. Some VE's say they can no longer reach the VEC - only a recording. We immediately accredited VE's and sent test packages to all teams that needed them. Anybody have any further information on Metroplex's status?

- "Computer Basics", a Time-Life hard-cover book (p.74) identifies ham radio magazine "QST" (March 1974) as initially announcing the existence of the first microcomputer. Using an Intel 8008 chip, Connecticut firm, Scelbi (for SCientific, ELectronic and BIological) Computer Consulting designed the Scelbi-8H. In 1975, the Altair 8800 (built around the Intel 8080 - a descendant of the 8008) was the first to be made available to the public (\$397 in kit form). It was designed by a young Air Force officer, Lt. Edward Roberts, Kirtland AFB, Albuquerque, NM.

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# W5YI REPORT.....

Page #3

September 15, 1986

The most recent ARRL Letter said "This step would preserve the right of the ARRL to appeal to the US courts if the Board of Directors feel it necessary. The Committee strongly felt that the adopted rules were not specific regarding the difficulty of the respective written examination elements. This creates a likelihood that amateur exams will, over time, drift away from the standardization that the FCC itself acknowledges is essential to the examination program."

This statement is confusing in that VEC's at the 1986 Conference were in unanimous agreement that written examination questions should be standardized and took steps by forming a Committee for Question Pool Maintenance to insure this. The purpose of the Committee is to provide a vehicle whereby VEC's can collectively agree on written examination question pools.

The League has never told its membership about the standardization position taken by the VEC's at the conference and gives the impression that chaos will result by having a multitude of question pools with varying degrees of difficulty. The ARRL VEC manager agreed to serve on the committee "pending approval by the ARRL directors." It appears that the League has chosen not to support the concept. The final date that Petitions for Reconsideration can be filed is now over. A ruling is expected about month end.

## FCC ISSUES NEW RFI HANDBOOK....

The Field Operations Bureau, FCC, has just released a new Interference Handbook. It is the best ever! Written by the Staff of their Public Service Division, the manual identifies sources of interference to home entertainment equipment and recommends an appropriate solution.

Covered is interference involving two-way transmitters, television, computers, paging systems, VCR's, TV booster amplifiers, telephones, electronic organs, AM/FM radios, stereo/hi-fi equipment as well as electrical and power line RFI.

A chapter lists dozens of manufacturers of consumer electronics and what each will do

to assist the public with RFI problems involving their equipment. Performance ratings of low-pass, high-pass, power line and other filters are also given.

Step-by-step transmitter (and television) modification instructions advise qualified technicians how to evict RF interference. An interference check list tells amateur operators what to do when they get a report of TVI.

The 64-page full-color handbook will be available at all FCC field offices shortly. It is must reading for every ham operator!

## EPA PROPOSES RF RADIATION STANDARDS

The U.S. Environmental Protection Agency has released a Notice of Proposed Rulemaking (almost the size of a book) proposing Alternatives for Controlling Public Exposure to Radiofrequency Radiation

Three of the options proposed for frequencies are regulatory. Above 3 Megaertz, the standards would limit whole-body specific absorption rates (SAR's) to .04, .08 and .4 watts per kilogram respectively. Electric field intensity (volts per meter) and magnetic field intensity (amperes per meter) would be limited for frequencies below 3 Megahertz to 87 V/m and .23 A/m, 275 V/m and .73 A/m and 614 V/m and 1.63 A/m respectively.

The fourth (non-regulatory) option would provide an information and technical assistance program in lieu of adopting specific guidelines. Any of the alternatives could be recommended to the President as Federal Radiation Guidance Protection.

The EPA said that their NPRM is necessary since the number and type of RF radiation sources have increased and the population is continuously exposed to varying degrees of RF radiation and the number of persons exposed to higher levels has grown. Concerns over potential health effects from RF radiation has also heightened. The EPA noted that the need for Federal Guidance for RF radiation has been expressed to the agency by Federal and other governmental bodies, by industry and by the public.



# W5YI REPORT.....

Page #8

September 15, 1986

• Business Communications Co., a market research company says that 127 million "smart" credit cards will be issued by such firms as VISA, MasterCard and Sear's new Discovery card as early as next year. The microprocessor chip imbedded card will be used for electronic banking, identification, personal data bases and encrypting devices. VISA already has a contract with Toshiba to produce their smart card and MasterCard projects nationwide use of their version in 1987! Smart cards allow immediate and inexpensive credit verification and are tamper proof!

• Another ham band (440-450 MHz.) "Pocket Communicator" is being marketed to the general public by the "CCS Counter Spy Shop" with no mention that an amateur license is required. Ad even boasts a "built-in encryption system to keep your conversation private" also illegal under the rules! Apparently this is a big outfit with offices in New York, Washington DC, Miami, Houston, Beverly Hills (CA) ...even London and Paris. They market all sorts of weird devices. Their catalog itself sells for \$25 - refundable against purchase. (633 Third Ave./ NYC 10017)

• The September issue of Technology Today edited at the Massachusetts Institute of Technology says that the Pentagon wants to ban Soviet student use of supercomputers on U.S. campuses. Government officials say there is a serious danger that such visitors will secretly use computer time for research with military value. According to U.S. government reports, "technology acquisition is a \$1.4 billion Soviet industry. The Soviet 'collection agencies'", as the report calls them, "reportedly bring in an annual haul of 100,000 documents and up to 10,000 pieces of hardware." A few years ago U.S. security interests were very concerned about small microprocessor-based personal computers. "Now the Soviet Union can buy 20,000 small Japanese PC's in one fell swoop."

• The Northern California DX Club will be 40 years old - the nation's oldest - on October 10th. A certificate is available free of charge for working 40 NCDXC members between October 10, 1986 and October 10, 1987. QSLs are not required, merely a list (with UTC date/time) certified by any recognized ham club to: NCDXC; Box 608; Menlo Park, CA 94026.

• A federal grand jury in Pennsylvania has charged 12 persons with smuggling more than seven and one-half tons of cocaine into the United States from Colombia and distributing it throughout the nation. Federal investigators also found \$4.2 million in cash buried on property in the Poconos resort area.

The defendants used a charter air service (Scranton, PA, based Air America, Inc.) to fly cocaine (and cash) back and forth from Colombia to the U.S. An elaborate two-way radio set up was installed by Christopher P. Sharsky of Uvalde, Texas, to control aircraft enroute from Acandi, Colombia, and to stay in short wave contact with Colombia and chase planes. If convicted, he faces 190 years imprisonment and a \$1.6 million fine.

According to the Attorney General, it was the largest cash seizure and the largest amount of cocaine ever smuggled into the U.S. involving a single organization. (Info provided by U.S. Attorney, James J. West, Middle District of Pennsylvania.)

• General Electric has proposed its Home-Net protocol to the Electronic Industries Association for use as a power line control system standard. HomeNet provides standardized communication for the exchange of control information over power lines among devices and services such as lights, appliances, security and heating/cooling. The EIA Consumer Electronics Group is currently developing standards for home control systems that use power line, infrared, dedicated wiring (including coaxial cable and/or fiber optics) and radio. The committee is also developing a standard for the command language and message structure.

• The FCC has adopted rules to reinstate the definition of the National Radio Quiet Zone in Part 97.3(k). The area is bounded by  $39^{\circ} 15'N$  on the north,  $78^{\circ} 30'E$  on the east,  $37^{\circ} 30'S$  on the south and  $80^{\circ} 30'W$  on the west. The quiet zone protects sensitive radio astronomy operations and the Naval Research Laboratory at Sugar Grove, WV. Amateurs must get permission from the National Radio Astronomy Observatory at Green Bank, WV, before placing a repeater or an automatic beacon in operation in the protected area.

DO YOU EXCERPT OR QUOTE FROM "THE W5YI REPORT?"

This is, of course, allowed without limitation. The W5YI Report appears on many computer bulletin boards and in club newsletters. We do not get any income from this and would appreciate it if you would publish our small classified ad (see margin between pages 4 & 7) on license preparation materials. Thanks!

WOULD YOU DO US A FAVOR?

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Page #3

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The fourth (non-regulatory) option would provide an information and technical assistance program in lieu of adopting specific guidelines. Any of the alternatives could be recommended to the President as Federal Radiation Guidance Protection.

The EPA said that their NPRM is necessary since the number and type of RF radiation sources have increased and the population is continuously exposed to varying degrees of RF radiation and the number of persons exposed to higher levels has grown. Concerns over potential health effects from RF radiation has also heightened. The EPA noted that the need for Federal Guidance for RF radiation has been expressed to the agency by Federal and other governmental bodies, by industry and by the public.

# W5YI REPORT.....

Page #4

September 15, 1986

There are no Federal standards or guidelines for controlling exposure by the public to RF radiation in the environment. As a result, the FCC proposed the adoption of interim standards for public exposure to RF radiation until Federal guidelines were adopted or standards were put in place by the EPA. The FCC decided to use the 1982 voluntary ANSI (American National Standards Institute) standard in processing license applications and modifications.

The lack of a Federal standard has caused some areas (such as in Oregon, New York, Massachusetts, Texas ...New Jersey) to enact their own radiation restrictions. The EPA noted that most Western countries have occupational standards ranging from 1 to 10 milliwatts per square centimeter. The USSR standard is far stricter - 25 microwatts (.025 milliwatts) per square centimeter. The EPA said typical sources of radiation include AM and FM radio and television broadcast stations, radars, satellite communication and microwave relay systems, land mobile radio and amateur radio.

The highest population exposure levels are from domestic broadcast stations with frequencies between 535 kHz and 806 MHz with the FM broadcast band between 88 and 108 MHz providing the most intense public exposures. This frequency band falls within the resonant absorption for humans resulting in maximal rates of energy absorption by the body, the EPA said. Levels of absorption are determined by how close people are to an RF source. The most common corrective method to reduce public exposure is to control public access near a broadcast station by constructing a fence around the antenna tower perimeter.

Amateur radio equipment, particularly hand-held two meter talkies where the antenna is held close to the head, have the potential to radiate energy rates in excess of the guidelines.

The EPA has concluded that adverse human health effects are associated with whole body SAR's of 1 to 4 W/kg or greater. Comment period closes on October 28, 1986.

(Action by EPA NPRM, Docket: A-81-3)

## FCC PROPOSES RECEIVER DEREGULATION

The FCC has issued a Notice of Proposed Rulemaking looking toward relaxing the equipment authorization procedures required for the receiver portion of a transceiver.

To keep interference to a minimum, most radio frequency devices are required to meet certain technical standards before they can be marketed or placed in use. The procedures for FCC equipment approval are:

- (1.) Verification a self-approval process whereby the marketer of the device keeps a record of interference measurements in its files.
- (2.) Notification requires submission of an application to the FCC without measurement results.
- (3.) Certification requires written application and test results for equipment used without a license.
- (4.) Type Acceptance requires a desk review and evaluation of a written application and test reports for equipment used under a license. (Since amateurs are permitted to build transmitting equipment, type acceptance is not required for transmitters used solely in the Amateur Radio Service.)
- (5.) Type Approval requires the FCC to test the equipment.

Under the present transceiver authorization process, two separate applications must be filed with the FCC, one is for type acceptance or certification of the transmitter and the other is for notification or certification of the associated receiver.

The FCC said that the receiver portion of transceivers has established an excellent compliance record. "We believe that it is no longer necessary, therefore, to require the filing of additional equipment authorization applications for such receivers." The Commission also noted that if there are suspected problems they have the option of obtaining receiver samples and testing.

The Commission also said that further deregulation of the equipment authorization process is under review. Comments close on November 4, 1986.

Action by FCC released 8/27/86 by NPRM

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# W5YI REPORT.....

Page #5

September 15, 1986

## UPDATE ON THE HOME DISH BUSINESS....

The cat-and-mouse game between the satellite programmers, satellite equipment makers/dealers and the backyard dish owner continues - each trying to outsmart the other. Each are looking out for their own interest. Referees in the form of Congress and the FCC are trying to enforce the rules - or write new ones as the game wears on. The whole industry is in a state of turmoil!

## UPLINK SATELLITE ID SYSTEM PROPOSED

The FCC proposed last month to require satellite video uplink transmitters radiate a new "signature" called ATIS - Automatic Transmitter Identification System. ATIS would automatically be transmitted along with the satellite uplinked video signal. The idea is to preclude any more "Captain Midnight" episodes - vigilantes who vent their wrath on satellite programmers by overwhelming their transponders. The FCC also asked the public to comment on whether ATIS should be required for all radio services and transmitting devices.

The satellite uplink ATIS Notice of Proposed Rule Making is General Docket 86-337, the Notice of Inquiry on ATIS for other radio services is FCC 86-356. The automatic transmitter ID would consist of a distinct code imbedded at time of manufacture. The FCC and the programmer would know which satellite facility caused a transponder to be jammed or overridden, or in the case of other radio services (even the Amateur Radio Service), who caused the interference.

ATIS isn't a new concept. It was even suggested as a identification mechanism for the CB service many years ago but never implemented. According to the NPRM, all up-links would have to include ATIS on their radiated video signals by December 31, 1987.

## FCC ORDERS SATELLITE SIGNAL STUDY

The Commission also unanimously voted to study the scrambling of satellite-delivered programming and access to those signals by the nation's nearly 1.5 million home satellite owners. The House telecommunications sub-

committee requested the study. Congress will use the results obtained by the Commission as ammunition for their law making. According to FCC Chairman Mark Fowler, the public inquiry into signal scrambling will be completed by year end. It is anticipated that the study will recommend much needed reforms.

The Senate has been holding hearings on the backyard dish controversy. Congress has asked that satellite, cable and broadcasting firms be fair to home dish owners. Programmers, on the other hand, defend their right to do what they wish to with the signals they own and transmit.

Senator Albert Gore (D-Tenn) introduced new legislation that will allow citizens to file suit against networks that refuse to make programming available under equitable terms. His bill joins a stack of scrambling moratorium proposals - none of which will probably ever be acted on.

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# W5YI REPORT.....

Page #4

September 15, 1986

There are no Federal standards or guidelines for controlling exposure by the public to RF radiation in the environment. As a result, the FCC proposed the adoption of interim standards for public exposure to RF radiation until Federal guidelines were adopted or standards were put in place by the EPA. The FCC decided to use the 1982 voluntary ANSI (American National Standards Institute) standard in processing license applications and modifications.

The lack of a Federal standard has caused some areas (such as in Oregon, New York, Massachusetts, Texas ...New Jersey) to enact their own radiation restrictions. The EPA noted that most Western countries have occupational standards ranging from 1 to 10 milliwatts per square centimeter. The USSR standard is far stricter - 25 microwatts (.025 milliwatts) per square centimeter. The EPA said typical sources of radiation include AM and FM radio and television broadcast stations, radars, satellite communication and microwave relay systems, land mobile radio and amateur radio.

The highest population exposure levels are from domestic broadcast stations with frequencies between 535 kHz and 806 MHz with the FM broadcast band between 88 and 108 MHz providing the most intense public exposures. This frequency band falls within the resonant absorption for humans resulting in maximal rates of energy absorption by the body, the EPA said. Levels of absorption are determined by how close people are to an RF source. The most common corrective method to reduce public exposure is to control public access near a broadcast station by constructing a fence around the antenna tower perimeter.

Amateur radio equipment, particularly hand-held two meter talkies where the antenna is held close to the head, have the potential to radiate energy rates in excess of the guidelines.

The EPA has concluded that adverse human health effects are associated with whole body SAR's of 1 to 4 W/kg or greater. Comment period closes on October 28, 1986. (Action by EPA NPRM, Docket: A-81-3)

## FCC PROPOSES RECEIVER DEREGULATION

The FCC has issued a Notice of Proposed Rulemaking looking toward relaxing the equipment authorization procedures required for the receiver portion of a transceiver.

To keep interference to a minimum, most radio frequency devices are required to meet certain technical standards before they can be marketed or placed in use. The procedures for FCC equipment approval are:

- (1.) Verification a self-approval process whereby the marketer of the device keeps a record of interference measurements in its files.
- (2.) Notification requires submission of an application to the FCC without measurement results.
- (3.) Certification requires written application and test results for equipment used without a license.
- (4.) Type Acceptance requires a desk review and evaluation of a written application and test reports for equipment used under a license. (Since amateurs are permitted to build transmitting equipment, type acceptance is not required for transmitters used solely in the Amateur Radio Service.)
- (5.) Type Approval requires the FCC to test the equipment.

Under the present transceiver authorization process, two separate applications must be filed with the FCC, one is for type acceptance or certification of the transmitter and the other is for notification or certification of the associated receiver.

The FCC said that the receiver portion of transceivers has established an excellent compliance record. "We believe that it is no longer necessary, therefore, to require the filing of additional equipment authorization applications for such receivers." The Commission also noted that if there are suspected problems they have the option of obtaining receiver samples and testing.

The Commission also said that further deregulation of the equipment authorization process is under review. Comments close on November 4, 1986.

Action by FCC released 8/27/86 by NPM

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Code Tapes 5, 13 or 20 wpm \$4.95 + \$1.00 postage  
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# W5YI REPORT.....

Page #7

September 15, 1986

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So at this point it appears that C-band DBS will support VideoCipher II technology and Ku-band, the Scientific Atlanta scrambling format. Hopefully a compromise system will be developed that receives both C-band and Ku-band service - or one of the two systems will emerge as the industry standard. Otherwise we will have two totally incompatible DBS systems and with it, millions of unhappy home satellite owners. Programmers, such as HBO, probably will decide that issue.

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# W5YI REPORT.....

Page #5

September 15, 1986

## UPDATE ON THE HOME DISH BUSINESS....

The cat-and-mouse game between the satellite programmers, satellite equipment makers/dealers and the backyard dish owner continues - each trying to outsmart the other. Each are looking out for their own interest. Referees in the form of Congress and the FCC are trying to enforce the rules - or write new ones as the game wears on. The whole industry is in a state of turmoil!

## UPLINK SATELLITE ID SYSTEM PROPOSED

The FCC proposed last month to require satellite video uplink transmitters radiate a new "signature" called ATIS - Automatic Transmitter Identification System. ATIS would automatically be transmitted along with the satellite uplinked video signal. The idea is to preclude any more "Captain Midnight" episodes - vigilantes who vent their wrath on satellite programmers by overwhelming their transponders. The FCC also asked the public to comment on whether ATIS should be required for all radio services and transmitting devices.

The satellite uplink ATIS Notice of Proposed Rule Making is General Docket 86-337, the Notice of Inquiry on ATIS for other radio services is FCC 86-356. The automatic transmitter ID would consist of a distinct code imbedded at time of manufacture. The FCC and the programmer would know which satellite facility caused a transponder to be jammed or overridden, or in the case of other radio services (even the Amateur Radio Service), who caused the interference.

ATIS isn't a new concept. It was even suggested as a identification mechanism for the CB service many years ago but never implemented. According to the NPRM, all uplinks would have to include ATIS on their radiated video signals by December 31, 1987.

## FCC ORDERS SATELLITE SIGNAL STUDY

The Commission also unanimously voted to study the scrambling of satellite-delivered programming and access to those signals by the nation's nearly 1.5 million home satellite owners. The House telecommunications sub-

committee requested the study. Congress will use the results obtained by the Commission as ammunition for their law making. According to FCC Chairman Mark Fowler, the public inquiry into signal scrambling will be completed by year end. It is anticipated that the study will recommend much needed reforms.

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# W5YI REPORT.....

Page #6

September 15, 1986

uses the DES algorithm for the scrambling code and it is highly sophisticated. As the video scene changes, so does the scrambling code.

What they may have overlooked is the fact that on the other side of the door are three hinge pins that if taken out you can still open the door even though there is a secure lock on the other side. We understand that a National chip commonly used in VCR cameras makes horizontal and vertical sync. It takes the 3.58 MHz color frequency devides it down and creates the vertical and horizontal sync pulses.

Supposedly this chip added to a M/A Com Videocipher II has the capability to tap into the 3.58 MHz color burst frequency and eliminate the ones that are "jittering" around. Freshly made horizontal and vertical sync pulses are substituted and your picture locks right in.

If this is true, then it could explain why the descramblers are selling so well, but no one is signing up for the programming. The industry may be right back at "square one."

The satellite programmers in an attempt to preclude free TVRO reception, also scrambled it for the cable stations. Some 6,000 plus cable head ends in the country had to buy Videocipher equipment so they can descramble the signal before they feed it on down the cable. This all sounds far fetched, but if true, the financial impact on industry will be staggering.

## VIDEOCIPHER TECHNOLOGY SOLD!

To add further intrigue, cable equipment supplier, General Instrument Corporation is now the new owner of the M/A Com's Cable/Home Group including the VideoCipher encryption technology. They just paid \$220 million for the unit. The marketplace has spoken. G.I. saw the handwriting on the wall. Their competing and technically conflicting "Starlok" signal scrambling system was used by the U. S. Army, Telesat/Canada and Telstar Corp, a Los Angeles based pay-per-view programmer.

"Starlok" is not compatible with the Videocipher scheme. Some feared that VideoCipher would be discontinued and replaced with Starlok technology obsoleting tens of thousands of VideoCipher II's, but this won't happen. GI plans to add some of the Starlok features to VideoCipher and then phase out Starlok.

Cable companies are cautiously optimistic. It will provide them with one-stop-shopping for cable equipment. They hope that they get support for their systems purchased from M/A Com. Backyard dish owners are just now finding out that new thinking could be added to the satellite programming saga.

SPACE, the home satellite industry lobby, said they felt that GI "will lend more corporate support to the home dish satellite industry than M/A Com has in the past." General Instrument plans to aggressively pursue the direct-to-the-home satellite programming market.

## THE FUTURE OF BACKYARD DISH STATIONS

1986 was an incredibly poor year for the home satellite industry. Satellite scrambling caused a boom-to-bust situation almost overnight! Sales are down drastically! 1985 saw some 600,000 home TVRO stations sold. The number of installed home dishes now is more than 1.4 million.

CSP, a New York based consulting and research firm has put together a report (at \$2,500 a copy) that says by 1988, sales of home satellites will once again reach or surpass 1985's "high water mark."

CSP feels that 290,000 dishes will be sold this year and between 350,000 and 500,000 in 1987. The industry will hit "full stride" in 1988 when the number will be between 500,000 and 700,000.

Their forecast is based on their belief that hardware costs will have fallen to the point where a consumer will be able to buy a dish and subscribe to a package of scrambled pay programming for three years for the same amount the consumer in 1985 paid for the hardware alone - \$2,500. The home satellite

market will also reap the benefits of the availability of cable programming on Ku-band satellites permitting the use of smaller and less expensive earth stations and the development of phased array antennas which are aesthetically more pleasing and easier to install

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# W5YI REPORT.....

Page #7

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# W5YI REPORT.....

Page #8

September 15, 1986

- Business Communications Co., a market research company says that 127 million "smart" credit cards will be issued by such firms as VISA, MasterCard and Sear's new Discovery card as early as next year. The microprocessor chip imbedded card will be used for electronic banking, identification, personal data bases and encrypting devices. VISA already has a contract with Toshiba to produce their smart card and MasterCard projects nationwide use of their version in 1987! Smart cards allow immediate and inexpensive credit verification and are tamper proof!

- Another ham band (440-450 MHz.) "Pocket Communicator" is being marketed to the general public by the "CCS Counter Spy Shop" with no mention that an amateur license is required. Ad even boasts a "built-in encryption system to keep your conversation private" also illegal under the rules! Apparently this is a big outfit with offices in New York, Washington DC, Miami, Houston, Beverly Hills (CA) ...even London and Paris. They market all sorts of weird devices. Their catalog itself sells for \$25 - refundable against purchase. (633 Third Ave./ NYC 10017)

- The September issue of Technology Today edited at the Massachusetts Institute of Technology says that the Pentagon wants to ban Soviet student use of supercomputers on U.S. campuses. Government officials say there is a serious danger that such visitors will secretly use computer time for research with military value. According to U.S. government reports, "technology acquisition is a \$1.4 billion Soviet industry. The Soviet 'collection agencies'", as the report calls them, "reportedly bring in an annual haul of 100,000 documents and up to 10,000 pieces of hardware." A few years ago U.S. security interests were very concerned about small microprocessor-based personal computers. "Now the Soviet Union can buy 20,000 small Japanese PC's in one fell swoop."

- The Northern California DX Club will be 40 years old - the nation's oldest - on October 10th. A certificate is available free of charge for working 40 NCDXC members between October 10, 1986 and October 10, 1987. QSLs are not required, merely a list (with UTC date/time) certified by any recognized ham club to: NCDXC; Box 608; Menlo Park, CA 94026.

- A federal grand jury in Pennsylvania has charged 12 persons with smuggling more than seven and one-half tons of cocaine into the United States from Colombia and distributing it throughout the nation. Federal investigators also found \$4.2 million in cash buried on property in the Poconos resort area.

The defendants used a charter air service (Scranton, PA, based Air America, Inc.) to fly cocaine (and cash) back and forth from Colombia to the U.S. An elaborate two-way radio set up was installed by Christopher P. Sharkey of Uvalde, Texas, to control aircraft enroute from Acandi, Colombia, and to stay in short wave contact with Colombia and chase planes. If convicted, he faces 190 years imprisonment and a \$1.6 million fine.

According to the Attorney General, it was the largest cash seizure and the largest amount of cocaine ever smuggled into the U.S. involving a single organization. (Info provided by U.S. Attorney, James J. West, Middle District of Pennsylvania.)

- General Electric has proposed its HomeNet protocol to the Electronic Industries Association for use as a power line control system standard. HomeNet provides standardized communication for the exchange of control information over power lines among devices and services such as lights, appliances, security and heating/cooling. The EIA Consumer Electronics Group is currently developing standards for home control systems that use power line, infrared, dedicated wiring (including coaxial cable and/or fiber optics) and radio. The committee is also developing a standard for the command language and message structure.

- The FCC has adopted rules to reinstate the definition of the National Radio Quiet Zone in Part 97.3(k). The area is bounded by  $39^{\circ} 15' N$  on the north,  $78^{\circ} 30' E$  on the east,  $37^{\circ} 30' S$  on the south and  $80^{\circ} 30' W$  on the west. The quiet zone protects sensitive radio astronomy operations and the Naval Research Laboratory at Sugar Grove, WV. Amateurs must get permission from the National Radio Astronomy Observatory at Green Bank, WV, before placing a repeater or an automatic beacon in operation in the protected area.

# W5YI REPORT.....

Page #9

September 15, 1986

## AMATEUR RADIO CALL SIGNS....

assigned through the first of August.

Radio District	Gp."A" Extra	Gp."B" Adv.	Gp."C" Tech/Gen	Gp."D" Novice
0	NU0M	KE0HS	N0HKE	KA0YQH
1	NG1K	KB1ZV	N1EIP	KA1OYV
2	NT2I	KD2VC	N2GPP	KB2BNJ
3	NC3S	KC3ZB	N3FCR	KA3QAB
4	AA4VS	KJ4ZC	N4OQL	KB4UQB
5	WQ5G	KF5QL	N5JQV	KB5ARZ
6	WX6E	KI6JY	N6OER	KB6OAK
7	NW7L	KE7TP	N7INQ	KA7ZQZ
8	NT8J	KE8HB	N8HTI	KB8AHI
9	NN9L	KD9ZE	N9GAR	KA9WAV
N. Mariana I.	AH0E	AH0AC	KH0AI	WH0AAF
Guam	AH2W	AH2BI	KH2CD	WH2AKB
Johnston Is.	AH3A	AH3AC	KH3AB	WH3AAC
Midway Is.		AH4AA	KH4AD	WH4AAF
Palmyra/Jarvis	AH5A			
Hawaii	(*)	AH6HG	NH6HC	WH6BLC
Kure Is.			KH7AA	
Amer. Samoa	AH8C	AH8AC	KH8AD	WH8AAW
Wake Wilkes Peale		AH9AC	KH9AC	WH9AAE
Alaska	(*)	AL7IH	NL7JE	WL7BLA
Virgin Is.	KP2O	KP2BA	NP2BV	WP2AFD
Puerto Rico	WP4V	KP4KV	NP4YT	WP4GAR

(Note: All Group "A" call signs have been assigned in Hawaii and Alaska. Group "B" now being assigned to Extra Class amateurs.)

## HAMS TO CHOOSE THEIR OWN CALL SIGN?

It could happen - in fact it is likely! The concept, which has preliminary FCC approval, calls for the ARRL to issue secondary call signs for use by amateur radio operators who already hold FCC assigned call signs.

The League made the request to the Secretary, FCC, in a letter dated June 17, 1986. ARRL asked for the exclusive role of issuing special amateur radio call signs. The Commission believes that it can legally be done under the existing rules.

Johnny Johnston, W3BE, Chief of the Personal Radio Branch told us Friday he "does not believe there is any legal impediment as long as the FCC assigns the primary amateur radio station call sign. The Bureau Chief (Bob Foosaner) is interested and moving on the

concept. It will be discussed at San Diego (ARRL National Convention) this week end."

The League will have certain guidelines for issuing supplemental call signs. The major stumbling block is a needed provision for "cost recovery." In other words, it won't be free. You'll have to buy the call sign. A translation list made available to the FCC will let them know an amateur's FCC issued call sign. It appears probable that secondary, memorial and special event call signs are on their way back! It could happen this year.

- John Small, FCC/Washington DC advises that third party traffic has been authorized between Korean amateur stations 6K86AG and HL86A and the United States for the period September 6 though October 8, 1986, to commemorate the 1986 Asian Games being held in Seoul.
- Due to PRB-1, an antenna ordinance in the city of Lighthouse Point (Florida) has been made less restrictive. Citing that new federal guidelines prohibit restrictions, such as size, that would limit an antenna's performance, residents can now install satellite dishes up to 10 feet in diameter but must provide permanent enclosures to reduce their unsightly appearance.

- Apparently the Metropolex VEC (Leonia, NJ) is having some problems! We have been asked to coordinate many amateur radio sessions that Metropolex previously coordinated. Some VE's say they can no longer reach the VEC - only a recording. We immediately accredited VE's and sent test packages to all teams that needed them. Anybody have any further information on Metropolex's status?

- "Computer Basics", a Time-Life hard-cover book (p.74) identifies ham radio magazine "QST" (March 1974) as initially announcing the existence of the first microcomputer. Using an Intel 8008 chip, Connecticut firm, Scelbi (for SCientific, ELectronic and BIological) Computer Consulting designed the Scelbi-8H. In 1975, the Altair 8800 (built around the Intel 8080 - a descendant of the 8008) was the first to be made available to the public (\$397 in kit form). It was designed by a young Air Force officer, Lt. Edward Roberts, Kirtland AFB, Albuquerque, NM.

# W5YI REPORT.....

Page #10

September 15, 1986

## "MUST-CARRY" TV PROGRAMMING UPDATE

The "A/B" switches are coming! The "A/B" switches are coming! (But not soon.) They really should be named "B/C" switches since they allow a TV viewer to switch between over-the-air Broadcast (VHF TV output) and wireline Cable television input. (See VOL. 8, Issue #14, p.4)

By a 5-0 vote, FCC Commissioners August 7th maintained the requirement that cable companies must-carry local TV broadcast signals on their systems. The new rules (not yet published) require that cable operators set aside no more than 25% of their channel capacity for local broadcast programming. In what is being termed a "lawyer's solution" (that is, a compromise) the requirement expires in five years.

The controversy erupted a year ago when a federal court (thanks to a Ted Turner suit) struck down the 20 year old must-carry rules as unconstitutional. The ruling essentially allows cable TV systems to drop local TV broadcast stations from their lineup if they duplicate cable programming or if channel short cable systems opt for higher revenue producing programming elsewhere.

It is this last possibility that has broadcasters steaming. Once dropped from the cable line up they fear consumers will not view their programming since it takes an antenna to receive over-the-air television. Broadcasters also recognize that wireline (closed circuit) video quality is far superior to the over-the-air variety. What used to be the only game in town is now being technologically reduced to a second rate also-ran.

The FCC said that during the five year period that "must-carry" is in effect, cable operators will be required to inform every subscriber about A/B switches - what they are, how they work and the broadcast programming available via the switch and an antenna.

Broadcasters and cable operators alike aren't happy with the decision. Broadcasters fear that cable will be so firmly entrenched in five years that consumers will not buy the

needed outdoor antenna that few will have by then. Cable firms must provide both the A/B switch and installation at no cost (although there seems to be a question on the labor) when the five year period expires if the subscriber wants it.

Cable operators say the switch represents a considerable expense that will never be used and since they are "free", every consumer will want one. Estimates of cable industry costs range from \$30 to \$100 million. In an effort to please everyone, the FCC has apparently pleased no one.

Installation and quality of the switch apparently isn't as simple as many have made it out to be. Some are calling it a "technical headache." VCR hookup to cable lines is already causing cable operators enough problems. And improperly installed A/B coaxial switches can result in severe signal reduction, leakage and interference - another headache for the ham community to deal with. You can surely look for newly manufactured TV sets to not only be "cable ready" but "A/B switch ready" as well.

It is all kind of ironical. The cure is appears worse than the disease. The NCTA, the cable industry association, says providing and installing the A/B switches will be difficult, time-consuming and costly. They estimate at least a \$3 hardware cost plus installation. Cable operators wanted to rid themselves of the burden of having to carry all local TV stations on their systems and apparently will pay dearly for the right. You can look for some "Petitions of Reconsideration" or even some lawsuits on this one. Ted Turner, who started all of this, can't be happy.

The ISRG (Independent Space Research Group, Rochester, NY) is attempting to construct a small (18") orbiting telescope for use by amateur astronomers. The satellite, dubbed the AST (Amateur Space Telescope), is being designed to transmit pictures in digital form over amateur radio bands so that anyone with modest radio gear can receive pictures. AMSAT has agreed to build communication devices for the satellite and allow the use of Phase III satellites as relays between AST and the ground.